

say whether his collection, now owned by Oberthür, contains any specimen from either country; but he possesses specimens from French Guiana collected by Constant Bar at Isle Portal on the Maroni, the river which separates French and Dutch Guiana. He gives a list of other localities from which he possesses specimens, but none of them are of special importance.

PROCEEDINGS OF SOCIETIES.

CAMBRIDGE ENTOMOLOGICAL CLUB.

8 MARCH 1889.—The 144th meeting was held at 156 Brattle St., the president in the chair.

Dr. H. A. Hagen said that the cyclamens in a greenhouse in Montvale, Mass., had been injured by *Otiorynchus sulcatus*, and remarked on the history of our knowledge of its depredations in America.

Mr. S. Henshaw stated that it had recently been introduced into New Zealand where it is also doing much damage.

Mr. H. Hinkley showed a variety of *Saturnia io* in which the eye-spot on the hind wing is almond-shaped. He has raised a large number and showed a fairly large series which exhibited some very pretty gradations of color.

Mr. S. H. Scudder remarked on the former range of distribution of *Pieris oleracea*. He gave as a reason why *P. rapae* has exterminated *P. oleracea* that the first brood of the former hatches about two weeks earlier than that of the latter species.

Mr. Scudder then read a paper on cosmopolitan butterflies.

Dr. H. A. Hagen remarked briefly on the distribution of certain dragon-flies in Brazil, showing that many are extremely local.

Mr. J. H. Emerton showed drawings of the copulatory organs of *Agalena naevia*. The palpal organs are, with few exceptions, of three varieties, the most common variety having a stout spiral tube of one and a half

turns with the tip turned outward. Another variety found only in large individuals has the tube longer and more slender, and a third variety found in spiders of various sizes, has the tube very short and coiled in a small spiral. The epigynum is of two principal forms; one with a simple opening, and the other, usually occurring in large spiders, with a wide opening partly divided into two by a process from the front edge; between these are many intermediate forms. The other parts of the male palpi vary but little and there are no other variations which would show that we have more than one species of these spiders.

Mr. Emerton stated that he had found a new species of spider in the natural history society building in Boston. There were two specimens, one male and one female. They may be foreign as they were found near some West Indian material that had been there for about two years.

[The records of several meetings at this point have been lost.]

11 October, 1889.—The 148th meeting of the Club was held at 156 Brattle St., the president in the chair.

The secretary stated that the records of the last meeting had been mislaid.

Mr. S. H. Scudder gave an account of what had been done at the meeting of the Executive Committee, and showed the circular which was sent soliciting subscriptions to Psyche.

Mr. Scudder then gave a brief account of his field work in the west during the past summer for the U. S. Geological Survey. Having first visited Florissant in order to make sure of bringing home a sufficient number of fossil insects to warrant the outlay of the expedition, he next went to western Colorado to examine two localities near together. One of them on the summit of the Roan Mountains, on the divide between the White and Grand Rivers, where fossil plants of species identical with those found at Florissant had been obtained many years ago,

and the other in the lower White River, where at two different localities forty miles apart Denton had many years ago brought home a small collection of fossil insects of presumably the same age as those at Florissant. In both of these places the party was very successful. The journey had to be made in a wagon and the search among the rocks on foot or on horseback, and as the greater part of the time had to be given up to the attempt to discover which beds contained fossil insects, very little was left for the exploitation of the same; for the beds in which insects were found covered an area of hundreds of square miles, and in a vertical series ranging from five hundred to fifteen hundred feet, in nearly all of which some remains were found but in certain localities, especially at the extreme upper beds, in such abundance as to warrant the belief that each of these localities may be richer than that of Florissant, hitherto believed to be the richest in the world: Subsequent visits were made to Green River, Wyo., where the pocket in which all specimens had hitherto been found had been entirely worked away, and his efforts were directed to the discovery of some new location in the immediate vicinity; in this he was successful, and was able to obtain several hundred specimens; at Fossil in the same territory, insects were found to occur so rarely as not to warrant a search for them, and at Amethyst Mt., in the Yellowstone Park, no strata sufficiently fine in which to preserve the remains of fossil insects were found in those beds which have yielded the leaves of plants.

Mr. Scudder then showed specimens of some of the fossil Diptera brought from Colorado. He said that the same species of larvae had been found throughout five hundred vertical feet of strata.

Dr. H. A. Hagen remarked on Dr. Packard's article in *Psyche* on the epipharynx of insects which he considers very important. He said that European white ants had been introduced into Panama.

Mr. S. H. Scudder remarked on the scarcity

of butterflies and in fact of all insects in the Yellowstone Park, and indeed throughout all the west during the past summer.

Mr. H. Hinkley said that he had investigated whether the milk-weed butterfly hibernates or not and came to the conclusion that it does not.

Mr. Scudder said that he had found it very difficult to make butterflies which hibernate in nature do so in confinement, so that he does not place much faith in negative evidence from artificial experimentation.

Mr. Hinkley said that a fungus disease very like muscardine has attacked the larvae of *A. promethea* during the past summer. He said that he had raised a true second brood of this species, and had reared large numbers of other Bombycidae in close proximity to his prometheas and none were affected.

8 NOVEMBER, 1889.—The 149th meeting of the Club was held at 156 Brattle St., the president in the chair.

Dr. H. A. Hagen in commenting upon an article on the gipsy moth (*Ocneria dispar*) in the Boston Transcript for 31 October, 1889 said that he remembered the fact of the accidental introduction of the species by Mr. L. Trouvelot some twenty years ago. Judging from his experience with the species in Europe, Dr. Hagen doubted the necessity for legislative acts and appropriations in order to suppress its ravages.

Mr. S. H. Scudder exhibited a fossil trilobite which showed a remarkable resemblance to a scarabaeid-beetle (*Phanaeus*), also a new species of fossil butterfly (*Barbarothesa florissanti*) from Florissant, Col. This butterfly is the second of the Libytheinae found at Florissant, and is most closely related to the European species; the other (*Prolibythesa vagabunda*) is most nearly allied to the species from West Africa. Of the known fossil butterflies one ninth are Libytheinae; of living species one eight-hundredth belong to the same family.

Mr. Scudder also exhibited a photograph of a suffused melanic male of *Papilio turnus* sent by Mr. James Fletcher of Ottawa.